

### **DETAILED ACTION**

1. **Claims 1-17** have been examined and are pending.

#### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 04/06/2005, 01/11/2006 and 02/14/2007 are being considered by the examiner.

#### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10530348 filed on 04/06/2005.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 16-17** are rejected under 35 U.S.C. 101 claimed invention is directed to non-statutory subject matter.

**Claims 16-17** are directed to a "program product executed on a computer", which does not constitute statutory subject matter such as a process, machine, article of manufacture or composition or matter. In contrast, a claimed computer-readable medium having instructions is a computer element which defines structural

and functional interrelationships between the instructions and the computer to permit the instructions' functionality to be realized, and is thus statutory. Examiner suggests changing the claim language to incorporate a computer-readable medium for storing instructions of the program. Also see pages 30 and 53 of the Interim Guidelines for Examination of Patent applications for Patent Subject Matter Eligibility.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-4, 6-7 and 14-17** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application No. 20020107969 to Waldvogel, Marcel et al., (hereinafter "Waldvogel").

**As to Claim 1**, Waldvogel teaches data distribution apparatus comprising (as stated in par. 0020, lines 1-2, **server (distribution apparatus)** distributing streaming media):

a distribution unit using packet communication to distribute, to a reception apparatus, data having a serial number attached thereto in streaming (as stated in

par. 0020, lines 1-4, **server (distribution apparatus) distributing streaming media (data)** to one or more users associated with **client devices (reception apparatus)** includes strings of data made up of a plurality of successive **data units** having a **predefined order (serial number)**;

an acceptance unit accepting a request for distribution of stream data preceding a predetermined serial number, from said reception apparatus (as stated in par. 0022, line 9, and par 0052, lines 1-10, in response to a **command** from the **user's client devices**, or a new user at **client device requesting** the original **streaming data** firsts asks **server** for the multicast group identifier of the corresponding encoded UEP stream. Upon accepting the request **server (acceptance unit)** then transmits the segments in their respective time slots according to the transmission **sequence** of the encoded UEP stream);

and a transmission unit transmitting, upon the acceptance of said request for distribution, said stream data preceding said predetermined serial number in parallel with the distribution of data in said streaming form by said distribution unit (as stated in par 0051, lines 1-10, **streaming data server** encodes an original data of  $n$  symbols, or units, into a UEP codeword of  $N$  symbols, or segments, such that the error protection degree of the  $i$ -th symbol of the original data is  $L_{sub.i}$  for  $1 \leq i \leq n$ . Upon the **first request** for the original **data**, **server (transmission unit)** continuously sends the **stream** of its UEP codeword to a multicast group of **clients** via network).

**As to Claim 2**, Waldvogel teaches data distribution apparatus according to claim 1, further comprising a hold unit holding said stream data transmitted by said distribution unit for a predetermined period of time (as stated in par. 0023, lines 1-9 and par. 0030, lines 1-9, **server** includes a **stream** encoder for encoding **stored data** and/or data from an external media source. **Server transmits** the encoded **data** to client devices via network. Server transmits encoded data unit  $i$  as a segment every  $i+D$  **time slots (period of time)**).

**As to Claim 3**, Waldvogel teaches data distribution apparatus according to claim 1, wherein said transmission unit transmits said stream data preceding said predetermined serial number in descending order of the serial number (as stated in par. 0024, lines 1-9 the stream encoder of server encodes the  $n$  data units of the original data stream to produce a stream of encoded data segments. The stream decoder of each client, upon receiving **data segments** beginning with  $k+1$ , **reconstructs** an  **$i$ -th data unit** of the original **data stream** from  **$L.sub.i$  encoded data segments** which is in **descending order** of the serial number of **data segment**).

**As to Claim 4**, Waldvogel teaches data distribution apparatus according to claim 1, wherein said acceptance unit accepts said request for distribution including information about an amount of data requested to be distributed, from said reception apparatus, and said transmission unit transmits said stream data preceding said

predetermined serial number by said amount of data (as stated in par. 0051, lines 1-10 and par. 0052, lines 9010, **Streaming data server** encodes an original data of n symbols, or units, into a UEP codeword of N symbols, or segments. Upon the **first request** for the **original data**, **server** continuously **transmits** the **stream** of its UEP codeword to a multicast group of clients via network. The **user** leaves the multicast group when its **data request** is **fulfilled** and this multicast process ends only after all the users in the group finish **receiving** the **requested data streaming**).

**As to Claim 6**, Waldvogel teaches data distribution apparatus according to claim 1,

further comprising a monitor unit monitoring a congestion state of data distribution by said distribution unit, wherein when said monitor unit detects that there is the congestion state, said transmission unit stops or decelerates transmission of said stream data preceding said predetermined serial number, monitors whether recovery from said congestion state is made, and then controls transmission of said data (as stated in par. 0035, lines 1-15, **Streaming data server controls** the **parameters delay** measured in **time** required to transmit a single segment and the **bandwidth factor**. **It shifts** the transmission **time** of a given segment to one of the **neighboring time slots**. Delaying the frame by **data unit** times increases the necessary startup to max. Advancing the segment by **data unit** times raises this segment's transmission frequency, and increasing the **overall**

**bandwidth.** Forward shifts are limited by a **constant value**, backward shifts by a function of the **data unit's number**).

**As to Claim 7**, Waldvogel teaches data distribution apparatus comprising:

a distribution unit using packet communication to simultaneously distribute identical data in streaming form to a plurality of addresses (as stated in par. 0009, lines 1-3, Waldvogel teaches **method of distributing streaming media to one or more users** through **Streaming data server**);

an acceptance unit accepting a request for distribution of said data from a reception apparatus (as stated in par. 0051, lines 6-8, Waldvogel teaches **Streaming data server (acceptance unit)**, which upon **request** for the **streaming data**, continuously sends the stream of its UEP codeword to a **multicast group of clients** via network);

and a transmission unit transmitting, upon the acceptance of said request for distribution, in parallel with the distribution by said distribution unit to said plurality of addresses, data that is the same as the data being distributed by said distribution unit, to a unicast address of said reception apparatus from which said accepted request for distribution is provided, for a specific period of time (as stated in par. 0052, lines 6-8, Waldvogel teaches **Streaming data server** (transmission unit) transmits to client **requesting the streaming data** when client **joins** the multicast group, **receives** the UEP **data stream** symbols and stores them at its local buffer space).

**As to Claims 14-17**, Waldvogel teaches data distribution method and computer-readable medium for storing instructions of the program for a computer to execute a method for distributing data from a data distribution apparatus to a reception apparatus, (as stated in par. 0002, lines 1-10, and in par. 0051, lines 1-10, Waldvogel teaches ***streaming media data delivery system*** and ***application*** which is form of applications, such as entertainment, distance learning, news delivery, and Streaming data, distribution ***method*** and delivery of ***distributing streaming media*** to one or more ***users***).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 5, and 8-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Waldvogel as applied to **Claims 1-4, 6-7 and 14-17** above, and further in view of Shur, David Hilton et al., (hereinafter "Shur").

**As to Claim 5**, Waldvogel teaches data distribution apparatus according to claim 1, wherein said distribution unit distributes said data having the serial number attached thereto in streaming form to a multicast address, said transmission unit transmits said stream data preceding said predetermined serial number to a unicast address of said reception apparatus from which said accepted request for distribution is provided (as stated in par. 0051, lines 1-10 and par. 0052, lines 9-10, Waldvogel teaches data distribution apparatus, ***Streaming data server transmits the stream*** of its UEP codeword to a ***multicast group of clients*** via network. The ***user*** leaves the multicast group when its ***data request*** is ***fulfilled*** and this multicast process ends only after all the users in the group finish ***receiving the requested data streaming***).

Waldvogel does not disclose data apparatus distributing data to unicast address clients.

However, Shur does teach ***Multicast-Unicast server*** where user at the ***Unicast client selects*** the session ***multicast group*** to which he or she wants to join, which causes the ***Multicast-Unicast server*** to join the appropriate session on behalf of the ***requesting client***. The server then sets a bi-directional Unicast User Datagram Protocol (UDP) ***stream*** between itself and the client. All packets then received by the server from the ***Unicast client*** are address-translated to the appropriate ***Multicast session address***. In addition, all packets received by the server on the ***Multicast session address*** are address-translated and sent to the ***Unicast client*** (as stated in col. 1, lines 65-67 and col.2, lines 1-7).



It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waldvogel's **Streaming data server** to incorporate Shur's **Multicast-Unicast server**, which allows to distributes data having the serial number attached thereto in streaming form to a **multicast address**, said transmission unit transmits said stream data preceding said predetermined serial number to a **unicast address** of said **reception apparatus** or **client terminal device**.

The motivation would have been for real time transmission of streaming media and its distribution to clients with unicast or multicast address.

Therefore, it would have been obvious to combine these two references of Waldvogel's and Shur's disclosure in light of guaranteed communication for all without severe network resource consumption.

**As to Claim 8**, Waldvogel does not disclose data distribution apparatus comprising notification unit, however Shur teaches data distribution apparatus according to claim 7, further comprising:

a notification unit receiving, from said reception apparatus from which said accepted request for distribution is provided, notification that the data distributed by said distribution unit is received (as stated in col. 4, lines 65-67, col. 5, lines 1-5, Shur teaches **MUS server** with **notification unit** which launches a **control script** and **sends a response** to the **client** containing **information** about which multimedia tool to launch, and what UDP sockets, the Unicast IP address on the MUS and associated ports to listen to and to **send information** to corresponding to the

requested group. A second socket is used to send **control/status information** to **MUS server** from each **member** of the **Multicast group**);

and a stop unit stopping, upon the reception of said notification, the transmission to said unicast address of said reception apparatus (as stated in col. 5, lines 17-20, Shur teaches **MUS server** which detects **status messages** from the **client** are no longer **being sent** and **removes** the **client** from the list of **destinations** for the **particular Multicast group**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waldvogel's **Streaming data server** to incorporate Shur's **Multicast-Unicast server** with **notification unit**, which allows to distributes data having the serial number attached thereto in streaming form to a **multicast address**, said transmission unit transmits said stream data preceding said predetermined serial number to a **unicast address** of said **reception apparatus** or **client terminal device**.

The motivation would have been for real time transmission of streaming media and its distribution to clients with unicast or multicast address.

Therefore, it would have been obvious to combine these two references of Waldvogel's and Shur's disclosure in light of guaranteed communication for all without severe network resource consumption.

**As to Claim 9**, Waldvogel teaches receptions apparatus comprising:

a reception unit using packet communication to receive, from a data distribution apparatus, data having a serial number attached thereto in streaming form (as stated in par. 0051, lines 1-10 and par. 0052, lines 1-10, Waldvogel teaches receptions apparatus of a user at **client terminal (receptions apparatus) requesting** the original **streaming data** firsts asks **Streaming data server** for the multicast **group identifier** of the corresponding **encoded UEP stream**. It then **joins** the multicast **group**, **receives** the UEP **data stream** symbols and **stores** them at its local **buffer** space);

and a buffering unit storing, in buffer, when an address of a source of the packet received by said reception unit, a service identification number of said source and a service identification number of a destination are specific values communicated in advance to each other with said distribution apparatus and when an address of the destination is an address of said reception apparatus or a multicast address communicated to each other with said distribution apparatus, said packet received, so that no packet having the same serial number as the serial number attached to said packet is stored in said buffer (as stated in par. 0030, lines 5-8, par. 0029, lines 1-4 and par. 0064, lines 1-6, Waldvogel teaches **receiver (receptions apparatus)** which is able to **buffer** every segment containing **data units** received. Also, **data units** are **numbered in sequence**. Each segment will contain the **information** needed to **reconstruct** a single **data unit**. **Streaming data server** provide for carrying a fraction of each symbol of the original data stream in each of the corresponding UEP codeword symbols. Once the i-th symbol of the **original data**

**stream** is **retrieved**, the **information** related to this symbol carried in the **subsequent UEP codeword** symbols is **no longer buffered**).

Waldvogel does not disclose reception unit and distributing apparatus exchange addresses.

However, (as stated in col. 1, lines 56-67 and col.2, lines 1-7, Shur does teach **reception unit** of client and **MUS server** which obtains information about **sessions** on the **Multicast network** and makes such **information** available to the **Unicast client** on the Unicast network upon **request** by the client. The **Multicast-Unicast server** sets a **bi-directional** Unicast User Datagram Protocol (**UDP**) **stream** between itself and the **client** with **unicast address**. All packets then received by the server from the Unicast client are **address-translated** to the appropriate Multicast session address. In addition, all packets received by the server on the **Multicast session address** are **address-translated** and sent to the **Unicast client**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waldvogel's **Streaming data server** to incorporate Shur's **receptions apparatus** and **Multicast-Unicast server**, which allows to distributes data having the serial number attached thereto in streaming form to a **multicast address**, said transmission unit transmits said stream data preceding said predetermined serial number to a **unicast address** of said **reception apparatus** or **client terminal device**.

The motivation would have been for real time transmission of streaming media and its distribution to clients with unicast or multicast address.

Therefore, it would have been obvious to combine these two references of Waldvogel's and Shur's disclosure in light of guaranteed communication for all without severe network resource consumption.

**As to Claim 10**, Waldvogel does not disclose reception apparatus with distribution request units, however Shur teaches reception apparatus according to claim 9, further comprising:

a first distribution request unit making a request for distribution of said data to said data distribution apparatus (as stated in col. 1, lines 56-67, Shur teaches **receptions apparatus** with **distribution request unit** and **Multicast-Unicast Server**, which obtains **information** first about **sessions** on the Multicast network and makes such **information** available to the Unicast **client** on the Unicast network upon **request** by the **client**);

and a second distribution request unit making a request for stream data preceding a serial number of a firstly received packet, after said request for distribution is made, to said data distribution apparatus (as stated in col. 1, lines 56-67, Shur teaches **receptions apparatus** with its **distribution request unit**, and **Multicast-Unicast Server** which presents with a list describing the subject matter of each session, to the **user** at the Unicast **client** which **selects** the **session** to which he or she wants to join, and **Multicast-Unicast server** then joins the appropriate

***session*** on behalf of the ***requesting client*** for ***each media type*** for which the ***joining client*** wants to be a ***participant***).

Examiner uses the same rational of Claim 9 to combine the two references of Waldvogel and Shur.

**As to Claim 11**, Waldvogel does not disclose reception apparatus with distribution request units, however Shur teaches reception apparatus according to claim 10,

wherein said second distribution request unit makes notification of an amount of requested data in making said request for said stream data preceding said serial number of said firstly received packet (as stated in col. 1, lines 59-67, Shur teaches reception apparatus with ***distribution request unit of user*** at the ***Unicast client terminal*** which ***selects*** the session he wants to join and request the streaming data for that session, which causes the Multicast-Unicast ***server*** to take ***notice*** and ***join*** the appropriate ***session*** on behalf of the ***requesting client*** for each ***media type*** for which the joining ***client*** wants to be a ***participant***. The ***server*** then sets a ***bi-directional*** Unicast User Datagram Protocol (UDP) ***stream*** between ***itself*** and the ***client*** for the ***streaming data requested***).

Examiner uses the same rational of Claim 9 to combine the two references of Waldvogel and Shur.

**As to Claim 12**, Waldvogel does not disclose reception apparatus with distribution request units, however Shur teaches reception apparatus according to claim 10,

wherein said second distribution request unit makes notification of a type of a receivable protocol in making said request for said stream data preceding said serial number of said firstly received packet (as stated in col. 1, line 67, col. 2, lines 1-7, Shur teaches reception apparatus with ***distribution request unit*** which receives all ***packets*** received by the server on the ***Multicast session address*** are ***address-translated (protocol of client)*** and sent to the ***Unicast client***. The ***Unicast client*** is then able to ***participate*** in the ***Multicast session*** as both a ***sender*** and a ***receiver*** of ***packets*** to and from ***other Unicast*** and ***Multicast clients*** which are active during the session).

Examiner uses the same rational of Claim 9 to combine the two references of Waldvogel and Shur.

**As to Claim 13**, Waldvogel does not disclose reception apparatus with distribution request unit, however Shur teaches reception apparatus according to claim 9, further comprising:

a first distribution request unit making a request for distribution of said data to said data distribution apparatus (as stated in col. 4, lines 61-67, Shur teaches reception apparatus of ***client*** which starts a selected ***session*** or specific media in the session after ***requesting*** the selected session. The ***server*** then launches a

**control script.** The control script sends a **response** to the **client** containing **information** about which multimedia tool to launch, and what UDP sockets the Unicast IP address on the MUS and associated ports to listen to and to **send information** to corresponding to the **requested group**);

and a notification unit making, when a first multicast packet is received from said data distribution apparatus after said request for distribution is made, notification that said first multicast packet is received, to said data distribution apparatus (as stated in col. 4, lines 61-67, Shur teaches notification unit, second socket is used to send **control/status information** from each member of the **Multicast group** and when the **client** exits from the multimedia tool, **server detects** that **status messages** from the client are no longer being sent and removes the client from the list of destinations for the particular Multicast group).

Examiner uses the same rational of Claim 9 to combine the two references of Waldvogel and Shur.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 6584096 to Allan Ian David, US Patent No. 6181697 to Nurenberg, Steven Howard et al., US Patent No. 7079495 to Pearce, Christopher E. et al., US Patent Application No. 20050002395 to Kondo, Eiichi and US Patent



Application No. 20030051251 to Sugimoto, Masao et al., are cited for reference purpose only.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muktesh G. Gupta whose telephone number is 571-270-5011. The examiner can normally be reached on Monday-Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T. Arani can be reached on 571-272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 4121

MG

/Taghi T. Arani/

Supervisory Patent Examiner, Art Unit 4121

1/21/2007